STAN-EVAL NOTES
CIVIL AIR PATROL VIRGINIA WING
UNITED STATES AIR FORCE AUXILIARY
7401 Airfield Drive
Richmond, Virginia 23237-2250
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Who is the PIC?: One of the most fundamental understandings a crew must have agreed to is who is the Pilot in Command (PIC). According to CFAR Par 91 "The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft." If you think about what that means, it's an awesome responsibility. Therefore it's important to understand just who the PIC is.

- The PIC should be specifically identified in the pre takeoff briefing so there is no confusion.
- There cannot be multiple PIC's. There is no such thing as someone acting as the FAA PIC and someone else acting as the CAP PIC at the same time. There can only be one person acting as the PIC (there are allowances for more than one pilot to log PIC time simultaneously – but logging time as a PIC is not the same thing as acting as PIC).
- The PIC does not have to be the pilot flying. Any properly qualified pilot can fly the airplane but the PIC is ultimately responsible for the flight and the PIC must be in the front seat (you can't be PIC from the backseat!).
- By mutual agreement, two pilots can agree to swap who is PIC in flight. But just make sure there is no confusion.
- Note that when a CAP sortie is entered in WMIRS, the PIC for the flight is specified. Your flight release is predicated on that person being the PIC. So normally, that is who the PIC is and that is what will be assumed. So if you swap who is the PIC in flight, this could be a source of confusion if there is an incident and a subsequent investigation. You should inform the FRO as part of the release that there will be a swap of who is PIC during the flight. The FRO will need to confirm that both pilots are properly qualified. An even better idea is to enter in two sorties to cover the two different PICs if practical. Of course; there could be situations where swapping PIC's should be done even if there was no plan to do so. An obvious situation would be if the PIC is incapacitated in some way.
- Confusion can be caused by having an instructor pilot or check pilot in the aircraft. They aren't normally the PIC even if they are acting as instructor or check pilot. Sometimes we just assume whoever is the most experienced pilot in the aircraft is the PIC. But the PIC is whoever is specified in WMIRS, briefed as the PIC in the takeoff briefing, and/or as mutually agreed.

Bottom line is that it must be crystal clear to the aircrew who is the PIC at all times.

Instructor Pilot Clinic: We had a very successful Instructor Clinic on Saturday 23 June at VAWG HQ with 17 pilots in attendance. Attendees included BGEN Joe Vazquez National Vice Commander, LtCol Leslie Vazquez Assistant DOV for NHQ, and Major Keith Mottas MER DOV. The presentations given are available on the VAWG Web Page.

Form 5 Clinic: Our planned funded Form 5 clinic in DAN on 21 July has been postponed due to funding issues. We have tentatively rescheduled this to 20 October. We will have several check pilots and instructor pilots to help you get your next Form 5 done. This clinic is open to any VAWG pilot needing a Form 5 check ride.

Hangar Rash and Taxi Mishaps (MGen Carr): In the past 60 days, Civil Air Patrol has experienced five hangar rash and two taxi mishaps. All seven were the result of improper actions by the aircrew. This is poor stewardship of taxpayers' dollars. In light of the massive funding cuts being experienced throughout the government, this is a totally unacceptable perception for Civil Air Patrol.

My "Conversation with the National Commander" initiative is an attempt to stem the tide of this type of mishap. However, I feel that we need to do more.

Effective immediately region and wing commanders will suspend the flight privileges of all pilots and aircrew involved in hangar rash or taxi mishaps resulting from improper actions, in accordance with CAPR 60-1, paragraph 2-7a. Those involved in this type of mishap will be subject to the following:

- First incident – immediate suspension of flight privileges for 90 days
- Second incident – immediate suspension of flight privileges for 180 days
- Third incident – permanent revocation of CAP flight privileges (pilot or aircrew)

Reinstatement of flight privileges and/or appeal of flight privilege suspensions will be in accordance with CAPR 60-1, paragraph 2-7.

I am counting on you to impress upon the members within your regions and wings of the importance of taking ownership of our aircraft and creating an environment that fosters safety in aircraft operations.
CHARLES CARR, MG, CAP
Commander Civil Air Patrol

Tail Strike Avoidance Training Update: As previously discussed, we are placing special emphasis on tail strike prevention training. All current G1000 pilots are required to take this training which consists of ground and flight training with a CAP Instructor Pilot. There are no exceptions – everyone must take the training. A syllabus is available on the VAWG Web page as well as a suggested slide deck for the ground training. We have also added a frequently asked questions document on the paperless wing. We had hoped to have a funded mission number for this training but as of this writing the funding is in doubt. Some pilots have opted to do this training at their own expense or included it in a funded F5 or F91 check ride. Once we figure out if we can fund this, we'll set a date by which all must take the training.

A G1000 C182 attitude of about 12.5 degrees will result in a tail strike (in a hard landing the tail will strike at a slightly lower attitude). Thus a rule of thumb is to never exceed 10 degrees when rotating for taking off or landing. Capt Karanikas noted that a 5 degree attitude is a little flat on landing but 7.5 degrees is "just right". This corresponds to the command bars on the attitude indicator when the go around (GA) mode is activated. Pilots can use the GA button to give them a command bar with a good attitude for landing and takeoff. Just be careful to keep your eyes out of the cockpit during takeoff and landing vice fixated on the command bars no matter how useful.

Moving Away From Paper - The use of MedXPress is mandatory beginning October 1, 2012 FAA Notice Number: NOTC3897: Effective October 1, 2012, pilots must use FAA MedXPress to complete an electronic application for an Airman Medical Certificate or Airman Medical and Student Pilot Certificate, FAA Form 8500-8. As many of you know, the Federal Government is taking steps across the board to become more efficient and to reduce costs, and our move to electronic records is consistent with those initiatives. One of the significant enhancements will establish a tracking program so that pilots and AMEs can query the system and electronically determine the status of applications. Future enhancements will also transition air traffic control specialists (ATCSs) to MedXPress, after internal FAA coordination and some modifications to the ATCS certification system. Why wait for the October 1, 2012 deadline? We encourage you to begin using MedXPress today. MedXPress is located at https://medxpress.faa.gov/. If applicants have any technical issues with MedXPress, they may reach MedXPress Support at 877-287-6731.

Appointments: You've just taken a Form 5 and the Check Pilot has initialed the Form 5 showing you to be a Cadet Orientation Pilot. You are now free to do Cadet Orientation flights, right? No, you must also be appointed. This has been a source of confusion for some pilots. There are certain positions that require appointment by the Wing. They are:

- CAP Cadet Orientation Pilot
- AFROTC Orientation Pilot
- Instructor Pilot
- Check Pilot
- Check Pilot Examiner
- Tow Pilot
- Flight Release Officer

A check pilot can sign you off for an aircraft, instrument privileges, and so forth. Once entered into eServices, validated and approved, you are good to go. But for those positions noted above you must be appointed.

What Does Roger Really Mean? FAA Notice Number NOTC3893: For most of us, we learned to use the word "Roger" early in our aviation career. We learned that it simply means that we heard and understand what the other person said. We were clearly taught that it connotes no permission or authorizations. For whatever reason, we then go through our career or hobby of flying and hardly ever use that word. And we seldom hear it spoken by ATC! So what happens when we have a problem on the airfield and we tell ATC that we need to do something and they say "Roger?" What does that mean?

Let me give you a recent example .A C-210 received ATC clearance to taxi via Taxiway Juliette and to cross Runway 1/19. En-route, the C-210 pilot advised ATC that the aircraft just blew a tire. The pilot requested to exit the aircraft to inspect the wheel. The Tower authorized the pilot's request and asked the pilot to advise if he needed help .At this time, a C-172 reported inbound with a request for full stop landings or touch and go's on Runway 1. The tower cleared the C172 as requested. (Can you see the Runway Incursion scenario developing?) The C-210 pilot came back on the frequency stating he had a wheel come apart. The Tower asked his intentions, and the C210 pilot said if he moved the aircraft it would do damage and requested to go to an FBO. (Getting to the FBO from the damaged C-210 would require a runway crossing.) The Tower responded "roger." The pilot responded, "Thank you very much."The Tower then observed two men on foot walking towards the runway. The tower called the C-210 several times with no response. The Tower, after observing the men crossing the actual runway told the inbound C-172 to go around and enter right traffic for Runway 1, later changing clearance to land on Runway 5. It appears to me that with the additional stress caused by the blown tire, when the pilot made his request to go to the FBO, he expected the Tower to give him a "Yes" or a "No", and when the Tower replied with a simple, "Roger," he forgot his early training that "Roger" is not an authorization -- and started hiking! Fortunately, the pilot of the C-172 executed a proper go-around and landed safely on another runway.

The Aeronautical Information Manual is the authoritative source for proper aviation communications. You might want to take an opportunity to review communication procedures in the AIM (Click here for AIM). But most of all, remember your early training - "Roger" only means that someone heard what was said; it does not give authority to do something. Remember that crossing any runway, whether in an airplane, a vehicle, or on foot, always requires a specific authorization from ATC. Have a safe and enjoyable Summer of Flying!

What's funded flying all about?: Pilots new to CAP are pleasantly surprised by the low rates that CAP charges for flying an aircraft. Flying a CAP airplane is about the half the cost of your local rental airplane. In some cases, CAP will fund the flying. But remember that whether you pay for the flying or CAP funds it, CAP is about service. CAP is not a flying club. In order to qualify for funded flying, the pilot must be willing, able, and qualified to perform a service. People who start with the "what's in it for me" premise are not a fit for CAP ... ask not what CAP can do for you; ask what you can do for CAP (with apologies for JFK). We should not get these qualifications just because it makes us eligible for funded flying. Our primary objective is to serve and

these qualifications allow us to do that. The funding is to make that service possible since flying can be expensive, but there is nothing wrong with enjoying the funded flying. Just make sure we have our priorities right – service first, fun second. And just because you are eligible for funded flying does not entitle you to funded flying.

In general (there are always exceptions), to be eligible for funded flying you must either be an Orientation Pilot or a Mission Pilot. There are three flavors of Orientation Pilots: CAP, Teacher, and AFROTC. The requirements are (from CAPR 60-1):

(1) Current CAP senior member.
(2) CAP VFR Pilot at least 21 years of age (or have a valid FAA CFI certificate).
(3) For powered airplanes have 200 hours PIC time.
(4) For gliders have 100 flights as PIC or be a qualified CFIG.
(5) For ROTC/JROTC Orientation Pilots have 300 hours PIC time and completed the exam for "Orientation Pilot – Powered for ROTC". This exam will be taken every 4 years
(6) Teacher Orientation Pilots must hold commercial pilot privileges.
(7) For CAP Cadet and Teacher Orientation Pilots complete the exam for "Orientation Pilot – Powered" if a power pilot and "Orientation Pilot – Glider" if a glider pilot. This exam must be taken every 4 years.
(8) Satisfactorily receive an Orientation Pilot endorsement, during a CAPF 5 Flight Evaluation, within the preceding 12 calendar months and be appointed in OPS Quals as an ROTC and/or CAP Orientation pilot by the, region or wing commander, or their designee.

Once you satisfy the above requirements you are eligible for funded orientation flying.

Mission Pilots are also eligible for funded flying. There are lots of flavors of Mission Pilots but the two basic types are the Transport Mission Pilot (TMP) and the Mission Pilot (MP). The easiest of these to qualify for is the TMP which requires no check ride. Instead, it is an ES rating requiring a TMP SQTR. The TMP SQTR lists the following requirements:

- GES - General Emergency Services
- IS100 - IS-100
- IS700 - IS-700
- VFR Pilot
- Aircraft Ground Handling
- 50 hrs cross-country
- Age Eligibility: 18 years
- PIC 200 hrs

Once you qualify in eServices and validated, you are now eligible for a limited set of funded missions. A TMP can only fly to and from a mission base for the purpose of transporting members or relocating assets. They may not act as PIC during any mission other than transport. They may also ferry aircraft for MX which is often funded.

Becoming a mission pilot is more difficult and requires a Form 91 (in addition to having a valid Form 5) check ride every 24 months. The requirements for a Mission Pilot are spelled out in the SQTR for Mission Pilot which lists many tasks that must be accomplished. This includes participating in two different missions as a Mission Pilot trainee.

Once you qualify as a Mission Pilot, you are eligible for funded mission flying (with some restrictions – counter drug and mountain flying missions require additional requirements).

C172 ASPEN Update (N4813C): VAWG has modified the requirements to fly the Aspen equipped C172 that NCWG loans to us when we loan them our GA8. In a nutshell, any VFR C172 qualified CAP pilot may fly

N4813C. An aircraft checkout is highly recommended because the avionics suite may not be familiar to many pilots. But VAWG does require an aircraft checkout (not a Form 5) if you want to fly this aircraft IFR. Any instructor pilot familiar with N4813C may do this checkout and a logbook endorsement should be made to document the checkout. N4813C is equipped with:

- Aspen EFD 1000 primary flight display (PFD)
- PS audio panel
- Garmin GMX 200 multi-function display (MFD)
- Garmin GNS 430 moving map nav/com
- Garmin SL30 nav/com radio
- Becker receiver (new)

Note that N4813C is now equipped with a Becker which it did not previously have making it a more valuable mission asset.

Changes to G1000 Software (Capt J. Karanikas): G1000 pilots may note some changes to the G1000 software including the addition of some very helpful functions. Version 0563.26 software service bulletin provides an upgrade that includes the following changes:

- Resolution for Garmin Service Advisory No. 1129 Rev A - Momentary loss of GRS 77 and GDC 74A Functions as addressed in Cessna Service Newsletter SNL11-15
- Approach Identifiers - Added the ability to check for approaches with 3-numeric approach identifiers so that WAAS LPV approaches with 3-numeric identifiers would be available; software fix to Garmin Service Advisory No.: 0825.
- Flight Plan Sorting - The functionality of sorting the stored flight plans was removed; software fix to Garmin Service Advisory No.: 1118.
- Graphical METARs - The display of graphical METARs is added to the active flight plan page and moving maps.
- METAR Text - Raw METAR text is displayed on the active flight plan page and moving maps when a METAR flag is highlighted with the map cursor.
- Weather Legend - A weather legend is added to the maps that share the weather-related soft keys (NEXRAD, XM, LTNG, and METAR). The display of this legend is controlled via the Legend soft key in the MAP tier of soft keys.
- METAR Search Radius - The active flight plan page can now be configured to show a METAR flag (and corresponding report) from a nearby location for any waypoint in the flight plan without an active reporting station. The search radius is set to 30 NM.
- Selected-Altitude Intercept Arc - A Selected-Altitude Intercept Arc is displayed on the moving maps that follow: Navigation map, PFD inset map, AUX - Trip Planning map, Active Flight Plan page map, and all NRST maps. A cyan arc is drawn across the active leg (when enabled via the Map Setup) to indicate the location at which the aircraft will reach the selected altitude based on the current barometric altitude, vertical speed, and ground speed.

- Profile View - The profile view option is added to the MFD Navigation Map. When enabled, the airplane's vertical position over terrain and obstacles is shown centered on the current ground track. When datalink weather is available, winds aloft information is also shown, which depicts a headwind or tailwind as a function of altitude. This vertical profile view is pilot configurable.
- Circular SAR Pattern - A circular search and rescue pattern is now available with the accomplishment of Cessna Service Bulletin SEB-34-01 Garmin G1000 Enhanced Search and Rescue Enablement.
- Runway Highlights - SVT no longer renders a runway highlight on the PFD synthetic view when there is obscuring terrain between the current aircraft position and the runway.
- Dual Navigation Databases - This feature allows a future navigation database to be stored in a standby location on the SO card in the bottom slot of each GDU. When the standby database becomes effective (as determined by the system date and time) the standby database will be automatically loaded into the active location internal to the GDU. This allows users to proactively update their aircraft with the next navigation cycle as soon as it becomes available, rather than having to wait until the first effective date to switch over.
- Database Crossfill - This feature allows most databases to be automatically cross-filled from the bottom SO card in one GDU to the bottom SO card in the other GDU. The following databases are supported: Basemap, Terrain, Airport Terrain, Obstacle, SafeTaxi, Airport Directory, and Standby Navigation.

Pilots Need To Prepare for Procedural Changes on Standard Instrument Departures (quoted from the NBAA): Significant changes are on the horizon that will affect pilots flying instrument departures and arrivals. Pilots unfamiliar with the changes could be faced with separation losses, pilot deviations and potentially tense moments in the cockpit. At the heart of the changes is a seemingly innocuous instruction, “Climb Via.” Following years of discussion, the new Climb Via instruction for standard instrument departures (SIDs) is scheduled to go live on Aug. 15, 2012. It mirrors the similar "Descend Via" instruction already being issued for standard terminal arrival route (STAR) procedures.

With the new instructions will come new terms and phrases used by air traffic controllers, and important changes with how pilots are expected to fly Climb Via SIDs. Members of the NBAA Access Committee – which focuses on issues affecting Member access to the National Airspace System (NAS) – believe the way for pilots to avoid problems lies with a pilot's knowledge and proper interpretation of charted altitude restrictions.

“Currently, ATC is not required to provide an assigned altitude to maintain with the initial IFR clearance when that altitude is published on the SID chart,” said NBAA Access Committee member Rich Boll. “That ‘maintain’ altitude may be the only one the pilot sees when looking at the SID.

“However, many SID procedures also have published, intermediate-altitude restrictions, including 'at,' 'at or below,' or 'at or above' restrictions, which must be followed for ATC separation purposes," Boll continued. “When issued a Climb Via clearance, pilots will be expected to abide by all restrictions listed on the procedure when vertically navigating the SID and climbing to the initial ‘maintain altitude’ published on the SID.”

Failure to comply with the charted SID procedure could result in a pilot deviation.

“Traditionally, pilots expect an initial altitude assignment to climb and maintain,” noted Keith Gordon, NBAA representative on the Las Vegas Valley Airspace Users’ Council and member of the NBAA Access Committee. “Climb Via is a streamlined way to say climb in accordance with any charted ‘at,’ ‘at or below,’ or ‘at or above’ altitudes on the SID. Many pilots aren't used to determining whether procedures contain mandatory altitude restrictions on the way up to their assigned altitude. That could lead to altitude busts, resulting in a loss of separation between departing and arriving traffic, and pilot violations.”

Boll added that such errors occurred during an early implementation of RNAV SIDs at a major air carrier hub in the western United States. “Pilots who were not adequately briefed on the procedures simply flew through the altitudes, resulting in a loss of separation,” he said.

Along with charted altitude restrictions, pilots will also be required to comply with published speed restrictions on instrument flight procedures, though controllers may still issue speed adjustments if needed. Once the adjustment is no longer required, ATC may advise aircraft to “resume published speed,” with no additional guidance provided.

NEXRAD Radar (from Max Trescott’s blog): “Today the NTSB issued an alert warning “pilots using in-cockpit FIS-B and Satellite Weather display systems that the NEXRAD "age indicator" can be misleading. The actual NEXRAD data can be as much as 20 minutes older than the age indication on the display in the cockpit. If misinterpreted, this difference in time can present potentially serious safety hazards to aircraft operating in the vicinity of fast-moving and quickly developing weather systems.” To put it more bluntly, pilots are dying because they’re unaware that NEXRAD data is much older than the 1 or 2 minute “age” they see on the screen.

This is old news, but somehow pilots seem to believe anything they read on a GPS or computer screen. I discussed the issue in detail in my Max Trescott’s Garmin G1000 Glass Cockpit Handbook, now in its 4th edition. Chapter 8 is devoted entirely to Onboard Data Link Weather, such as the services provided by SiriusXM, previously known as XM Weather, that pilot view on their portable GPSs and glass cockpit displays.

NEXRAD Radar data, one of the most used yet most misunderstood in-cockpit weather services, is described in detail. My section on the age of NEXRAD radar data says in part: “In the best case, some of the data you view in a NEXRAD image is at least eight minutes old. In precipitation mode, it takes five minutes to complete a scan of the atmosphere at the radar site. The data is sent to a central NWS computer where it’s processed for a couple of minutes and then sent to SiriusXM®, which distributes the data your G1000 or Perspective system receives. Updates are broadcast to your system every five minutes.

“While eight minutes may not seem like a long time, consider that cumulus clouds can grow at up to 3,000 feet per minute. Thus, in eight minutes, cloud heights could have increased by 24,000 feet and evolved into a serious thunderstorm sending hail and turbulence a long distance from the clouds.”

I vividly recall giving a presentation on the Garmin G1000 at a local flight school and explaining that the age of NEXRAD data is significantly longer than the age displayed on the screen. An otherwise bright young flight instructor countered “yes, but the screen says the data is only one or two minutes old.” I repeated my explanation of why the data is older than what’s displayed on the screen and he repeated, “yes, but the screen says….”

I fear we live in an age where many pilots—even some technically literate ones—believe everything they read on a computer screen. Sadly, failing to understand the limitations of data on a GPS or moving map can kill pilots. Just two weeks ago, I made a note to write a blog story on this topic when I ran across the following two accidents. In both cases, pilots were killed trying to pick their way through a line of thunderstorms, most likely with NEXRAD radar data they didn’t know was at least 8 minutes old.

Bruce Landsberg of the AOPA Air Safety Institute described one of the accidents. The accident aircraft, a 1992 Turbo Bonanza, was equipped “with dual Garmin 430W units and a satellite weather service subscription. It’s reasonable to assume that the pilot probably was viewing datalinked Nexrad radar, although that is not confirmed.”

Landsberg continues “The controller provided a pilot report from a Cirrus that had passed through the area about 20 minutes earlier. The Cirrus pilot reported light turbulence and heavy rain for about a minute. It had flown through a gap in the line “that was yellow to green on our onboard radar, versus red on either side of it. It was fairly good.”

Even the Cirrus pilot apparently didn't understand his equipment, as I've never seen a Cirrus with onboard radar. Undoubted, he too was using data link weather. Sadly, the Bonanza broke up in flight and the 790-hour pilot was killed.

The second accident, which occurred just last month on May 31, 2012, also involved a Beech Bonanza. According to the NTSB's preliminary report, "center controller advised the pilot of extreme precipitation at the airplane's 12 o'clock position… The pilot acknowledged the information and added that he was looking at it, and evaluating if there was any way to get through it…. At 1633, the controller asked the pilot if he had weather radar onboard, and the pilot replied that he had 'Nexrad Composite'." Aircraft wreckage was spread over 1.25 miles, possibly as the result of an in-flight breakup.

In my G1000 book, I talk about the differences between NEXRAD and airborne radar. "You should use NEXRAD radar to develop strategies for avoiding wide areas of weather, not for determining where to penetrate a storm. It's highly complementary to airborne radar… In contrast, airborne radar data is real-time, so it can be used tactically to help determine where to penetrate an area of storms, though it does have limitations."

To sum it up, NEXRAD data tells you were the storms WERE, not where they ARE. Pilots need to STOP USING NEXRAD TO PICK A PATH THROUGH THUNDERSTORMS—under penalty of death."

For the original NTSB release click here (NTSB Nexrad Release)

Emergency Preparedness (Lt. James G. Feiler, Wyoming Civil Air Patrol as quoted in AVWEB): The first plan of emergency preparedness takes place prior to lift-off. Check the weather, including winds aloft, general forecast, detailed forecast, long-range forecast, icing conditions and the list goes on.

File a flight plan. Use flight following. If mountain flying is encountered (which one should know beforehand) when planning a trip, go around. Gas and time are cheap compared to death. Stay away from those mountain peaks if at all possible, day or night. They're fun to look down on and fly next to but can kill you via mountain wave, winds, storms, up and down drafts, icing, etc.

Use common sense. Don't get "get there-it is". Think SDPTC (Slow Down, Plan, Think, Calculate).Do an honest weight-and-balance. By the way, none of the above adds weight to the aircraft. Have cell phones charged, buy a tracking device or personal locator, have first aid supplies on board and prepared meals. Have cold weather gear, emergency signal devices and emergency supplies.

Be prepared for the worst-case scenario. Brief all crew on emergency protocol, who hits 911 on Spot, etc. Everyone should have a responsibility during an emergency and know it. Remember to dial 911 on cell phone if going down and leave the line open. Don't worry about talking unless you have time -- and, lastly, stay calm!

Articles for the VAWG Stan Eval Newsletter: We are always looking for brief articles of interest to VAWG pilots to include in this newsletter. CAP has many very experienced pilots and aircrew who have useful techniques, experiences, and tips to share. Please send your contribution to steve.hertz@ngc.com. If your article is accepted, you will get a pro rata share of the VAWG Stan Eval Newsletter subscription fees.